

ABSTRACT OF THE DISCLOSURE

The present invention relates to a method and apparatus for detecting transitions between different gas or liquid products in a flow path and, more particularly, it relates to an apparatus and method utilizing Raman spectroscopy for detecting transitions between petroleum products. A Raman spectrometer is preferably to produce a monochromatic excitation beam at a wavelength of approximately 670 nm. The spectrometer consists of an entrance slit, a combined diffraction grating/focussing element, and an exit slit. The Raman signal, which exits the spectrometer exit slit is detected by a highly sensitive photomultiplier tube, and sent to a computer device for data acquisition and analysis. The proposed invention detects liquid or gas products in a flow path by detecting the changes in the composition of various petroleum products flowing through a gasoline pipeline, by means of exposing samples of various petroleum products to the Raman spectrometer system.